

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
29 September 2005 (29.09.2005)

PCT

(10) International Publication Number  
**WO 2005/091535 A1**

(51) International Patent Classification<sup>7</sup>: **H04B 10/17**

(21) International Application Number:  
PCT/EP2005/050955

(22) International Filing Date: 3 March 2005 (03.03.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
MI2004A000431 5 March 2004 (05.03.2004) IT

(71) Applicant (for all designated States except US): **MARCONI COMMUNICATIONS SPA** [IT/IT]; Via Lodovico Calda 5, I-16153 Genova (IT).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **MAGRI, Roberto** [IT/IT]; Via Raimondi 5, I-43100 Parma (IT). **COSTANTINI, Matteo** [IT/IT]; Via Pellico 6, I-43100 Parma (IT).

(74) Agent: **COLLIER, Ian**; Marconi Intellectual Property, Crompton Close, Basildon Essex SS14 3BA (GB).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

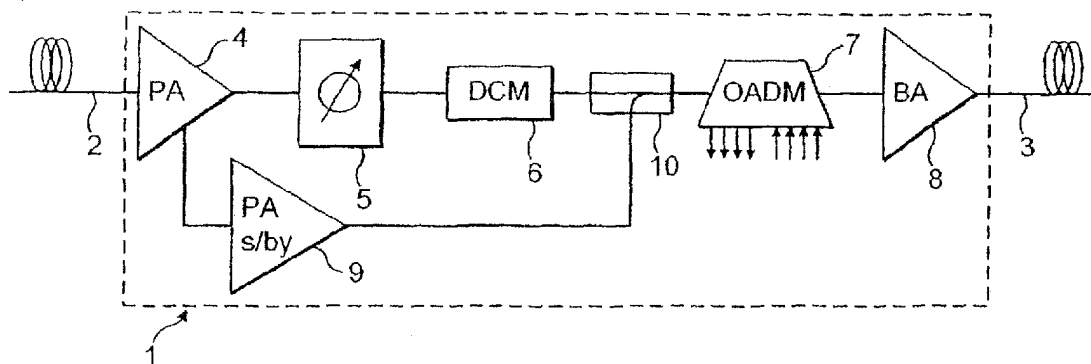
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: OPTICAL ADD/DROP AMPLIFICATION DEVICE



(57) Abstract: In an optical add/drop amplification device (1) arranged between fibre spans (2, 3) in an optical telecommunications system, comprising a first input amplifier (4), a channel add/drop device (7) and an output amplifier (8) connected in a series path, the input amplifier (4) is arranged to produce substantially constant output power, such that the output power of amplified spontaneous emission (ASE) noise compensates in use for loss of signal power in the event of breakage of a fibre span, to ensure survival of any channels added at the add/drop device. In accordance with the invention, an additional input amplifier (9) is provided to produce the compensating ASE noise in the event of failure of the first input amplifier.

